

Rock Tripes on a Long Island glacial boulder

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An occurrence of lichens which stimulates speculation as to its origin is a large colony of two forms of Rock Tripe, on an immense glacial boulder, near Wading River, Suffolk County, Long Island. This boulder, known locally as the Split Rock, is one of the largest in the long list of really big boulders in Fuller's Geology of Long Island. It is a mass of reddish gray granite, probably from eastern Connecticut, and was originally about $20 \times 20 \times 30$ feet but is split into several large fragments. It is on a lobe of the Harbor Hill Moraine, about half a mile north of the highway at a point three quarters of a mile west of Wading River. Mr. W. T. Davis, of the Staten Island Institute of Arts and Sciences told me of the lichen colony, from recollections of years ago, and I visited it recently.

Three of the fragments bear dense colonies of the Smooth Rock Tripe, *Gyrophora Dillenii*, and the blistered form, *Umbilicaria pustulata*, mixed with each other. I have not seen these large foliose lichens on any other glacial boulder on the island, but will search others. Earth and bark lichens are quite plentiful on eastern Long Island, where fires have not been too severe, but these Rock Tripes, which are familiar to the most casual observer, in the highlands of New Jersey and southern New York, and are also common on ledges on the Connecticut side of the Sound, are rare on Long Island, where the only rocks on the surface are glacial boulders.

This part of Long Island was covered with ice when the Ronkonkoma Moraine, to the south, was laid down; and was at the front of the ice when the Harbor Hill moraine was formed. Vegetation has since migrated in. The variety and numbers of earth lichens, such as Cladoniae, and various bark and some rock lichens, on small and large boulders, such as Parmelias, and Physcias in Suffolk County, suggest that these species had relatively little difficulty in establishing themselves, in spite of their dependence on associated algae. But these Rock tripes ordinarily like plenty of room; the bigger the boulder or ledge, in their habitats in the Highlands, the better they grow. It is probable that there are not many boulders big enough, or sufficiently exposed in the glacial moraines or outwash, or far enough

from the Sound or the ocean to escape the effects of salt spray; to be hospitable homes for Gyrophora or Umbilicaria. The chances against the establishment of the species, in the transmission of their spores, probably from Connecticut, to such boulders and of finding promptly their proper algal symbiont, Cystococcus, with fortunate moisture and temperature to germinate, would seem to be stupendous. But here they are on this split boulder at Wading River and they look as if they had been there for centuries. Birds or the wind must have carried the spores many times before one or the other agency landed them at the right time and place, and Cystococcus was there waiting, and this isolated colony started.

HOLLIS, LONG ISLAND